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# STATE COUNCIL OF CIVIL DEFENSE

## FEEDING MANUAL

## EMERGENCY WELFARE SERVICES

Harrisburg, Pennsylvania
1951

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STATE COUNCIL OF CIVIL DEFENSE

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# FOREWARD

Enemy attack upon our cities temporarily will deprive tens of thousands of people in the stricken areas of their normal means of sustenance. Emergency feeding of these individuals will require the services of all people trained and experienced in normal, large scale feeding activities, plus hundreds of volunteers specifically trained in emergency procedures.

A special advisory committee, composed of recognized authorities in the field, has prepared the material contained in this pamphlet as a preliminary guide for use in training volunteers for duty in mass feeding work. Within the near future, the State Council of Civil Defense will make this, and additional material on the same subject, available in printed form, for general use.

Richard Gerstell
Director of Civil Defense

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# SECTION I

## INTRODUCTION

In the event of a disaster the emergency feeding of large numbers of people is a major problem. Proper planning must be done well in advance of possible disaster. The first two (2) days of strictly emergency feeding are important to sustain morale and to provide as adequate food as circumstances permit.

This manual has been prepared for use as a guide for feeding people under a variety of conditions. Menus and foods needed are suggested. Local demands, facilities and available supplies will vary from place to place and from time to time. The type of program which may be used will be determined largely by the situation under which emergency feeding becomes necessary. Some situations are:

A. Buildings Not Safe. Utilities Not Available.
Feed from a truck or canteen.

B. Buildings Safe. Utilities Unavailable.
Feed from mobile kitchen; indoor or outdoor set up.

C. Buildings Safe. Utilities Available.
Feeding can be more nearly normal.

# SECTION II

# PRE-PLANNING

## INVENTORY OF LOCAL OR AREA FOOD SUPPLIES

Each county and local area Defense Committee should know the sources and possible amounts of foods available that can be tapped in case of emergency mass feeding.

Water Supplies - auxiliary sources

Food Supplies

- Bakeries
- Groceries
- Wholesale or Warehouses for:
  - Fruits
  - Vegetables
  - Meat
  - Fish
  - Staples such as cereals, sugar, coffee, tea, etc.
- Lockers for frozen foods
- Area Stock piling center or Paper Plates & Cups centers

## TRANSPORTATION FOR FOOD SUPPLIES

Mobile kitchens, truck or vans or by air

Thermos milk trucks

Tank trucks (for water)

# INVENTORY OF LOCAL FEEDING FACILITIES

The following are potential places to feed groups:

Commercial

- Restaurants
- Tea Rooms
- Cafeterias
- Diners

Non-Commercial

- Public school kitchens
- Private school kitchens
- Lodge kitchens
- Grange halls
- Church kitchens
- Industrial plant kitchens
- State and county institutions, such as mental hospitals, county homes for children and the aged, penal institutions.
- Military Camps
- State or local parks (with cooking facilities)

OTHER

When you know what facilities are available, check equipment, and supplies. Use the check sheet prepared for this purpose.

## PLAN FOR EXPANSION OF FACILITIES

Charcoal grills, army Hydra gasoline cookers, trench fires, and other means of outdoor-cooking devices may be used to furnish a supplemental supply of hot water.

Alternate Source of Utilities.

Priority should be established for an alternate source of electricity and gas.

Kitchens using gas should be prepared for a conversion to bottled gas by arrangement with equipment experts.

Consider possibility of laying out a field kitchen in rural areas.[1]

---

[1] New York Civil Defense Handbook on Emergency Feeding. Pages 34 - 35.

## EQUIPMENT RECORD FOR EMERGENCY FEEDING

Location ______________________ City or Town ______________________ County

Name of Emergency Feeding Station: ______________________
Address " " " ______________________
Type " " " ______________________
Hotel, Diner, School etc.

### Person Responsible in Case of Emergency Feeding

| Name | Address | Telephone Number |
|---|---|---|
| | | |
| | | |
| | | |

Maximum Feeding Capacity: ______________________

### Kitchen Equipment

| Equipment | Number | Fuel or Type | Size or Capacity | Condition of Equipment |
|---|---|---|---|---|
| Ranges | | | | |
| Ovens | | | | |
| Steamers | | | | |
| Steam Jacketed Kettle | | | | |
| Electric Mixers | | | | |
| Vegetable Peeler | | | | |
| Coffee Urn | | | | |
| Work Table | | | | |
| Sinks | | | | |
| Other | | | | |

### Cooking Utensils

| Utensils | Number | Size | Condition |
|---|---|---|---|
| Stock Pots: | | | |
| Sauce Pans | | | |
| Baking Pans | | | |
| Measuring Utensils | | | |
| Knives-Large | | | |
| " -Paring | | | |
| Spoons-Serving | | | |
| Can Openers | | | |

## Dishwashing Facilities:

Machine: Number ______ Type ________ Equipment used with Machine
Racks ____________________
OR Towels ____________________
Other ____________________

Sink: Number ______ Type ________ Equipment used with Sink
Towels ____________________
Disinfectant ____________________
Other ____________________

## Serving Facilities:

Size of Counter ______________________________

Number of Dishes:
Plates ______________________________
Bowls ______________________________
Sauce Dishes ______________________________
Cups ______________________________
Saucers ______________________________

Silver:
Knives ______________________________
Forks ______________________________
Spoons ______________________________

Seating Capacity of Dining Room ______________________________

## Storage Facilities:

Store Room __________ (yes or no) ____________________ (size)

Refrigerator __________ (yes or no) ____________________ (size, kind, power)

## Source of Supplies:

| Item | Normal | Emergency |
|---|---|---|
| Water | | |
| Fuel | | |
| Electricity | | |

## Supplies That Should be Available:

1. Garbage and Waste Disposal.
2. Cleaning Supplies.
3. First Aid "
4. Fire Extinguisher Supplies.
5. Toilet Facilities.
6. Dining Room Heating Facilities.

## MINIMUM PERSONNEL NEEDED FOR A MEAL
## FOUR TO SIX HOURS

| No. Served per meal | Total | Manager | Preparation<br>Cooks | Helpers | Service | Dish washing |
|---|---|---|---|---|---|---|
| 100-150 | 9 | 1 | 1 | 2 | 3 | 2 |
| 200 | 10-11 | 1 | 2 | 2 | 3 | 2-3 |
| 300 | 12 | 1 | 2 | 3 | 3 | 3 |
| 400 | 15 | 1 | 3 | 3 | 4 | 4 |
| 500 | 16 | 1 | 3 | 3 | 4 | 5 |
| 1000 | 23 | 1<br>1 for each shift | 5 | 5 | 6 | 6 |

Feeding units will be called upon to operate under variable conditions. The chart need not limit personnel if more are needed. The manager or supervisor could be someone experienced in food work such as in school kitchens, hospitals, restaurant, hotel and hospital work, if feeding is mobile in type the chief of canteen service might be the supervisor. Other workers may also be experienced in kitchen or cafeteria work. A definite policy of recruitment should be undertaken, soliciting restaurant, hotel, school, college and hospital personnel.

A crew may be assigned to each meal.

Line-up two (2) substitutes for each job as to insure someone being available in time of need.

Organization Suggestions.

The survey will show facilities best suited to feeding operations. A similar study of people should also be made. The manager or supervisor should keep a copy of the information available, i.e. name and address, phone number, use of car etc. It would be wise to call the work crews together at a possible feeding unit. A practice assignment would be undertaken, charging a fee for the meal served, also to provide publicity.

# SECTION III

## EMERGENCY FEEDING MEAL PATTERNS

### A. BUILDINGS NOT SAFE. UTILITIES NOT AVAILABLE.

Feeding from a truck or canteen most probable.

1. Sandwiches - Cheese, canned meat or fish, peanut butter, jam or jelly.
   Coffee, tea or cocoa.
   Cookies or crackers.
   Fruit, if available.

2. Canned fruit juice - orange, grapefruit, pineapple or tomato.
   Bread or crackers with margarine or jam.
   Coffee, tea, or cocoa.

### B. BUILDINGS SAFE. UTILITIES NOT AVAILABLE.

Mobile kitchen, out of door set-up or building assigned for feeding.

1. Hot soup - if possible.
   Sandwiches or bread or crackers.
   Coffee, tea, cocoa or milk.
   Dried prunes, apricots or raisins or fresh or canned fruit.

2. Canned fruit juice.
   Cooked or ready to eat cereal - milk - sugar.
   Bread with butter, margarine or jam.
   Coffee, tea, cocoa or milk.

### C. BUILDINGS SAFE. UTILITIES AVAILABLE.

Meals can be fairly normal.

1. Meat stew with vegetables.
   Cabbage slaw.
   Bread with margarine or butter.
   Fruit - fresh, stewed or canned.
   Coffee, tea or cocoa.

2. Baked beans or bean soup or spaghetti with meat sauce.
   Canned or fresh vegetables.
   Bread with margarine or butter.
   Fruit - fresh, canned or stewed.
   Coffee, tea or milk.

3. Fresh, canned, or frozen meat or fish.
   Boiled, creamed or scalloped potatoes.
   Canned or fresh vegetables.
   Bread with margarine or butter.
   Cake, cookies or doughnuts.
   Coffee, tea, milk.

In each of these situations self service will prevail. This may be continuous or staggered, depending on conditions and the number of people involved.

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR MENU SUGGESTIONS-PLAN A.

| Foods to order | Size of Serving | Purchase Unit | Amounts for Serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| **SANDWICHES** | 1 double sandwich | | | | | |
| Bread | | 2-pound loaf | 3 2-lb. loaves | 6 2-lb. loaves | 30 2-lb. loaves | 60 2-lb. loaves |
| | | or | | | | |
| | | 1-pound loaf | 7 1-lb. loaves | 13 1-lb. loaves | 23 1-lb. loaves | 125 1-lb. loaves |
| Butter | for 1 side | pound | 3/4 pound | 1½ pounds | 7½ pounds | 15 pounds |
| | or | | | | | |
| | for both sides | pound | 1½ pounds | 3 pounds | 15 pounds | 30 pounds |
| **FILLINGS:** | | | | | | |
| Cheese, sliced | 1 to 1½ oz. slice | pound | 4 pounds | 8 pounds | 40 pounds | 80 pounds |
| Meat, sliced | 1½ oz. slices | pound | 5 pounds | 10 pounds | 50 pounds | 100 pounds |
| Peanut butter | 2 tablespoons | pound | 4 pounds | 8 pounds | 40 pounds | 80 pounds |
| **COFFEE** | 1 cup (8 oz.) | | | | | |
| | | pound | 1¼ pounds | 2½ pounds | 12½ pounds | 25 pounds |
| Regular<br>or<br>Instant | | pound | 6 ounces | 12 ounces | 3 lb. 12 oz. | 7 lb. 8 oz. |
| **CREAM** | 1½ tbsp. | quart | 1¼ quarts | 2½ quarts | 12½ quarts | 25 quarts |
| or | | | | | | |
| **EVAPORATED MILK** (not diluted) | 1½ tbsp. | 14½ oz. can<br>or No. 10 can | 3 14 ½ oz. cans<br>—— | 6 14½ oz. cans<br>1 No. 10 can | 30 14½ oz. cans<br>5 No. 10 cans | 60 14½ oz. cans<br>9 No. 10 cans |
| **COCOA**, made with: | 1 cup (8 oz.) | | | | | |
| Cocoa | | pound | 10 ounces | 1 lb. 4 oz. | 6 lb. 4 oz. | 12 lb. 8 oz. |
| Sugar | | pound | 1½ pounds | 3 pounds | 15 pounds | 30 pounds |
| Salt | | pound | 1 teaspoon | 2 teaspoons | 3 tablespoons | 6 tablespoons |
| Fresh Milk-or- | | quart | 10 quarts | 20 quarts | 100 quarts | 200 quarts |
| Dry Skim milk-or- | | pound | 2½ pounds | 5 pounds | 25 pounds | 50 pounds |
| Evaporated Milk | | 14½ oz. can<br>or-No. 10 can | 7 14½ oz. cans<br>1 No. 10 can | 14 14½ oz. cans<br>2 No. 10 can | 70 14½ oz. cans<br>10 No. 10 cans | 140 14½ oz. cans<br>20 No. 10 cans |
| Vanilla (optional) | | ounce | 1 tablespoon | 1 ounce | 5 ounces | 10 ounces |

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR MENU SUGGESTIONS-PLAN A.

| Foods to Order | Size of Serving | Purchase Unit | Amounts for Serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| **ORANGE JUICE**<br>canned | 1 cup (8 oz.) | 46 oz. can | 8 46 oz. cans | 16 46 oz. cans | 80 46 oz. cans | 160 46 oz. cans |
| | | or | | | | |
| | | No. 10 cans | 4 No. 10 cans | 8 No. 10 cans | 40 No. 10 cans | 80 No. 10 cans |
| **CORNFLAKES** | 3/4 cup | 13 oz. pkg. | 13 oz. pkg. | 6 13 oz. pkgs. | 30 13 oz. pkgs. | 60 13 oz. pkgs. |
| or | | | | | | |
| **SHREDDED WHEAT** | 1 biscuit | 12 ozs. | 4-5 12 oz. pkgs. | 8-9 12 oz. pkgs. | 41-12 oz. pkgs | 82-12 oz. pkgs. |
| **SUGAR** | $1\frac{1}{2}$ tablespoons | pound | $2\frac{1}{2}$ pounds | 5 pounds | 25 pounds | 50 pounds |
| **MILK** | $\frac{1}{2}$ cup (4 oz. ) | | | | | |
| Fresh | | quart | 7 quarts | 13 quarts | 63 quarts | 125 quarts |
| or | | | | | | |
| Evaporated<br>(diluted) | | $14\frac{1}{2}$ oz. cans | 7 $14\frac{1}{2}$ oz. cans | 14 $14\frac{1}{2}$ oz. cans | 70 $14\frac{1}{2}$ oz. cans | 140 $14\frac{1}{2}$ oz. cans |
| | | or | | | | |
| | | No. 10 cans | 1 No. 10 cans | 2 No. 10 cans | 10 No. 10 cans | 20 No. 10 cans |
| **SUGAR** | $\frac{1}{2}$ tbsp. | pound | 3/4 pound | $1\frac{1}{2}$ pounds | $7\frac{1}{2}$ pounds | 15 pounds |
| **CRACKERS**<br>(100-120 per lb.)-8 each | | pound | 4 pounds | 8 pounds | 40 pounds | 80 pounds |
| or | | | | | | |
| Bread, whole wheat-2 slices | | 2-pound loaf | 3-2lb. loaves | 6 2-lb. loaves | 30 2-lb. loaves | 60 2-lb. loaves |
| | | or | | | | |
| | | 1-pound loaf | 7 1-lb. loaves | 13 1-lb. loaves | 63 1-lb. loaves | 125 1-lb. loaves |
| **BUTTER** | to spread 2<br>slices of bread | pound | 2 pounds | 4 pounds | 18 pounds | 36 pounds |
| or | | | | | | |
| **JAM** | 2 tablespoons | pound | 4 pounds | 8 pounds | 40 pounds | 80 pounds |

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR SUGGESTED MEAL PATTERN-PLAN B

| Foods to Order | Size of Serving | Purchase Unit | Amounts for Serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| TOMATO SOUP | 1 cup (8 oz.) | | | | | |
| Canned (diluted) half milk half water | | 51-ounce can<br>or<br>No. 10 can | 4 51 oz. cans<br>2 No. 10 cans | 8 51 oz. cans<br>4 No. 10 cans | 40 51 oz. cans<br>20 No. 10 cans | 80 51 oz. cans<br>40 No. 10 cans |
| or | | | | | | |
| Made from Tomato juice | | 46 oz. can<br>or<br>No. 10 can | 4 46 oz. cans<br>2 No. 10 cans | 8 46 oz. cans<br>4 No. 10 cans | 40 46 oz. cans<br>20 No. 10 cans | 80 46 oz. cans<br>40 No. 10 cans |
| Onions | | pound | 8 ounces | 1 pounds | 5 pounds | 10 pounds |
| Sugar | | pound | 3. ounces | 6 ounces | 1 lb. 14 oz. | 2 lb. 12 oz. |
| Salt | | pound | 4 ounces | 8 ounces | 2 lb. 8 oz. | 5 pounds |
| Pepper | | 4 oz. tin or lb. | ½ teaspoon | ½ teaspoon | 2 tablespoons | 4 tablespoons |
| Base for meat stock | | pound | 6 ounces | 12 ounces | 3 lb. 12 oz. | 7 lb. 8 oz. |
| Rice | | pound | 1 pound | 2 pounds | 10 pounds | 20 pounds |
| Peppercorns(optional) | | ounce | ¼ teaspoon | 1 teaspoon | 2 tablespoons | 4 tablespoons |
| Bay leaves(optional) | | ounce | 2 only | 4 leaves | 20 leaves | 40 leaves |
| Whole Cloves(optional) | | ounce | ½ teaspoon | 1 teaspoon | 2 tablespoons | 4 tablespoons |
| DRIED APRICOTS OR PRUNES | 5 each | pound | 5 pounds | 9 pounds | 45 pounds | 90 pounds |
| COOKIES (30-40 per pound) | 4 each | pound | 5 pounds | 10 pounds | 50 pounds | 100 pounds |
| COFFEE | 1 cup (8 oz.) | | | | | |
| Regular-or- | | pound | 1¼ pounds | 2½ pounds | 12½ pounds | 25 pounds |
| Instant | | pound | 6 ounces | 12 ounces | 3 lb. 12 oz. | 7 lb. 8 oz. |
| CREAM | 1½ tbsp. | quart | 1¼ quarts | 2½ quarts | 12½ quarts | 25 quarts |
| or | | | | | | |
| EVAPORATED MILK (not diluted) | 1½ tbsp. | 14½ oz. can<br>or No. 10 can | 3 14½ oz. cans<br>—— | 6 14½ oz. cans<br>1 No. 10 can | 30 14½ oz. cans<br>5 No. 10 cans | 60 14½ oz. cans<br>9 No. 10 cans |

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR SUGGESTED MEAL PATTERN-PLAN B

| Foods to Order | Size of Serving | Purchase Unit | Amounts for Serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| **TEA** | 1 cup (8 oz.) | | | | | |
| Regular | | pound | 6 pounds | 12 pounds | 3 lb. 12 oz. | 7 lb. 8 oz. |
| or | | | | | | |
| Instant | | ounces | 3 ounces | 6 ounces | 1 lb. 14 oz. | 3 lb. 12 oz. |
| **SUGAR** (for tea) | ½ tablespoon | pound | 12 ounces | 1 lb. 8 oz. | 7 lb. 8 oz. | 15 pounds |
| **MILK** | 1 cup (8 oz.) | | | | | |
| Fresh | | quart | 13 quarts | 26 quarts | 130 quarts | 260 quarts |
| or | | | | | | |
| Evaporated (diluted ½ and ½ with water) | | 14½ oz. can<br>or<br>No. 10 can | 14 14½ oz. cans<br>2 No. 10 cans | 28 14½ oz. cans<br>4 No. 10 cans | 140 14½ oz. cans<br>20 No. 10 cans | 280 14½ oz. cans<br>40 No. 10 cans |
| or | | | | | | |
| **DRY SKIM** (reconstituted 1 lb. to 1 gal. water) | | pound | 2½ pounds | 5 pounds | 25 pounds | 50 pounds |

Refer also to Plan A for other suggestions

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR MENU SUGGESTIONS-PLAN C

| Foods to Order | Size of Serving | Purchase Unit | Amounts for Serving<br>50 | 100 | 500 | 1000 |
|---|---|---|---|---|---|---|
| MEAT AND VEGETABLE STEW | 1 cup (8 oz.) | | | | | |
| Canned | | No. 10 can | 4 No. 10 cans | 8 No. 10 cans | 40 No. 10 cans | 80 No. 10 cans |
| or made with: | | | | | | |
| Beef, cubed | | pound | 11 pounds | 22 pounds | 110 pounds | 220 pounds |
| Onions | | pound | 5 pounds | 10 pounds | 50 pounds | 100 pounds |
| Potatoes | | pound | 6 pounds | 12 pounds | 60 pounds | 120 pounds |
| Carrots, Fresh | | pound or bunch | 6 pounds | 12 pounds | 60 pounds | 120 pounds |
| or canned | | No. 2 cans | 10 No. 2 cans | 20 No. 2 cans | 100 No. 2 cans | 200 No. 2 cans |
| | | or | | | | |
| | | No. 10 cans | 2 No. 10 cans | 4 No. 10 cans | 20 No. 10 cans | 40 No. 10 cans |
| Celery (1 large bunch equal $1\frac{1}{2}$ lb.) | | bunch | 1 large bunch | 2 lg. bunches | 10 lg. bunches | 20 lg. bunches |
| Flour | | pound | 1 pound | 2 pounds | 10 pounds | 20 pounds |
| Salt | | pound | 3 ounces | 6 ounces | 2 pound | 4 pounds |
| Pepper | | 4 oz. tin or pound | 1 teaspoon | 2 teaspoons | 3 tablespoons | 6 tablespoons |
| BEAN SOUP WITH FRANKFURTERS BAKED BEANS | 1 cup (8 oz.) | | | | | |
| | | No. 2 can | 5 No. 2 cans | 10 No. 2 cans | 50 No. 2 cans | 100 No. 2 cans |
| | | or | | | | |
| | | No. 10 can | 1 No. 10 can | 2 No. 10 cans | 10 No. 10 cans | 20 No. 10 cans |
| Celery (1 medium bunch equals 1 lb. or 1 quart E.P.) | | bunch, Medium | 1 bunch | 2 bunches | 10 bunches | 20 bunches |
| Onions, A. P. | | pound | $1\frac{1}{4}$ pounds | $2\frac{1}{2}$ pounds | $12\frac{1}{2}$ pounds | 25 pounds |
| Tomatoes | | No. 2 can | 4 No. 2 cans | 8 No. 2 cans | 40 No. 2 cans | 80 No. 2 cans |
| | | or | | | | |
| | | No. 10 can | 1 No. 10 can | 2 No, 10 cans | 8 No. 10 cans | 16 No. 10 cans |

## AMOUNTS OF FOOD TO SERVE 50-1000 PEOPLE FOR MENU SUGGESTIONS-PLAN C con't.

| Foods to Order | Size of Serving | Purchase Unit | Amounts for Serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| Butter or Margarine | | pound | 12 ounces | 1 lb. 8 oz. | 7 lb. 8 oz. | 15 pounds |
| Flour | | pound | 1/3 pound | 2/3 pound | 3 1/3 pounds | 6 2/3 pounds |
| Pepper | | pound | 1/2 teaspoon | 1 teaspoon | 5 teaspoons | 10 teaspoons |
| Salt | | pound | 1 teaspoon | 2 teaspoons | 2½ ounces | 5 ounces |
| Frankfurters | | pound | 4 pounds | 8 pounds | 40 pounds | 80 pounds |
| NAVY BEANS WITH TOMATOES | 1 cup (8 oz.) | | | | | |
| Navy beans, dried | | pound | 8 pounds | 16 pounds | 80 pounds | 160 pounds |
| Salt pork (bacon or other fat can be substituted) | | pound | 2 pounds | 4 pounds | 20 pounds | 40 pounds |
| Onions, A.P. | | pound | 2½ pounds | 5 pounds | 25 pounds | 50 pounds |
| Tomatoes | | No. 2 cans | 10 No. 2 cans | 20 No. 2 cans | 100 No. 2 cans | 200 No. 2 cans |
| | | or | | | | |
| | | No. 10 cans | 2 No. 10 cans | 4 No. 10 cans | 20 No. 10 cans | 40 No. 10 cans |
| Salt | | pound | 2 ounces | 4 ounces | 1 lb. 4 oz. | 2 lb. 8 oz. |
| SPAGHETTI WITH MEAT SAUCE | 1 cup (8 oz.) | | | | | |
| Onions, A.P. | | pound | 1½ pounds | 3 pounds | 7½ pounds | 15 pounds |
| Fat | | pound | 6 ounces | 12 ounces | 3 lb. 12 oz. | 7 lb. 8 oz. |
| Beef, ground | | pound | 4½ pounds | 9 pounds | 45 pounds | 90 pounds |
| Cream of tomato soup | | 10 oz. can | 8 10 oz. cans | 16 10 oz. cans | 80 10 oz. cans | 160 10 oz. cans |
| | | or | | | | |
| | | 51 oz. can | —— | 3 51 oz. cans | 16 51 oz. cans | 32 51 oz. cans |
| Vinegar (optional) | | quart | ½ cup | 1 cup | 5 cups | 10 cups |
| Horseradish (optional) | | ounce | 2 teaspoons | 4 teaspoons | 7 tablespoons | 14 tablespoons |
| Salt | | pound | 4 ounces | 8 ounces | 2 lb. 8 oz. | 5 pounds |
| Pepper | | 4 oz. tin, lb | 1½ teaspoons | 1 tablespoon | 5 tablespoons | 10 tablespoons |
| Garlic (optional) | | number | 2 cloves | 4 cloves | 20 cloves | 40 cloves |
| Spaghetti | | pound | 4½ pounds | 9 pounds | 45 pounds | 90 pounds |

| Food to Order | Size of Serving | Purchase Unit | Amounts for serving | | | |
|---|---|---|---|---|---|---|
| | | | 50 | 100 | 500 | 1000 |
| CABBAGE SLAW | ½ cup (4 oz.) | | | | | |
| Cabbage | | pound | 8 pounds | 16 pounds | 80 pounds | 160 pounds |
| Salad Dressing | | quart | 3/4 quarts | 1½ quarts | 8 quarts | 16 quarts |
| Salt | | pound | 2 ounces | 4 ounces | 1 lb. 4 oz. | 2 lb. 8 oz. |
| Sugar | | pound | 2 ounces | 4 ounces | 1 lb. 4 oz. | 2 lb. 8 oz. |
| WHOLE WHEAT BREAD | 2 slices | 2 pound loaf | 3 2 lb. loaves | 6 2 lb. loaves | 30 2 lb. loaves | 60 2 lb. loaves |
| or enriched bread | | or 1 pound loaf | 7 1 lb. loaves | 13 1 lb. loaves | 63 1 lb. loaves | 125 1 lb. loaves |
| BUTTER OR MARGARINE | to spread 2 slices of bread | pound | 2 pounds | 4 pounds | 18 pounds | 36 pounds |
| CANNED FRUIT | ½ cup (4 oz.) | No. 2½ cans | 7 No. 2½ cans | 13 No. 2½ cans | 62 No. 2½ cans | 125 No. 2½ cans |
| or | | or No. 10 cans | 2 No. 10 cans | 4 No. 10 cans | 20 No. 10 cans | 40 No. 10 cans |
| FRUIT GELATIN | | pound | 1 lb. 10 oz. | 3 lb. 4 oz. | 16 pounds | 32 pounds |
| Flavored Gelatin | | No. 2½ cans | 3 No. 2½ cans | 6 No. 2½ cans | 30 No. 2½ cans | 60 No. 2½ cans |
| Canned Fruit | | No. 10 can | 1 No. 10 can | 2 No. 10 cans | 10 No. 10 cans | 20 No. 10 cans |
| COFFEE | 1 cup (8 oz.) | | | | | |
| Regular-or- | | pound | 1 lb. 4 oz. | 2 lb. 8 oz. | 12 lb. 8 oz. | 25 pounds |
| Instant | | pound | 6 ounces | 12 ounces | 3 lb. 12 oz. | 7 lb. 8 oz. |
| CREAM -or- | 1½ tablespoons | quart | 1¼ quarts | 2½ quarts | 12½ quarts | 25 quarts |
| Evaporated Milk | | 14½ oz. can | 1½ 14½ oz. cans | 3 14½ oz. cans | 15 14½ oz. cans | 30 14½ oz. cans |
| SUGAR | ½ tablespoon | pound | 12 ounces | 1 lb. 8 oz. | 7 lb. 8 oz. | 15 pounds |
| MILK | | quart | 13 quarts | 26 quarts | 130 quarts | 260 quarts |
| Fresh or | | | | | | |
| Evaporated | | 14½ oz. can | 14 14½ oz. cans | 28 14½ oz. cans | 140 14½ oz. cans | 280 14½ oz. cans |
| (diluted ½ and ½ with water) | | or No. 10 can | 2 No. 10 cans | 4 No. 10 cans | 20 No. 10 cans | 40 No. 10 cans |
| or Dry Skim (reconstituted 1 lb. to 1 gallon water | | pound | 2½ pounds | 5 pounds | 25 pounds | 50 pounds |

## SECTION V

## FOOD SERVICE

### PROTECT FOODS FROM RADIO ACTIVE CONTAMINATION

Keep all foods covered at all times! Foods from closed cupboards, drawers or refrigerators are safe to use. Foods in sealed packages, jars, cans may be safe if the outside of the container is washed before opening. If water is temporarily not available, wait until it is before opening these cans.

Vegetables and fruits such as potatoes, onions, beets, oranges, apples need not be destroyed. If contaminated, leave undisturbed for a while. They may eventually be declared safe by radiological specialists.

Boiling food in water does not free it from radio active contamination. Serve nothing that is questionable! If the water has been affected, use only liquid from uncontaminated canned fruit and vegetables.

### A. EMERGENCY FEEDING RECIPES

#### Boiled Coffee for Serving 100

1½ lbs. course ground coffee
1½ cups cold water
2 eggs slightly beaten
5 gallons water

Mix coffee, cold water and eggs using also crushed egg shell. Place mixture in a cheesecloth bag large enough to allow for swelling and free circulation of water.

Put filled bag into the hot water. Stock pots may be used for this purpose. Bring to the boiling point. Let stand 15 or 20 minutes over low heat without boiling. Bag is not absolutely necessary.

#### Cocoa for Serving 100

5 - 6 cups cocoa
4 cups sugar
2½ qts. cold water
4½ gallons hot milk
Flavoring optional - vanilla or cinnamon

Mix cocoa and sugar. Add water and bring to a boil stirring constantly. Add hot milk and keep covered. If flavoring is available, cinnamon and instant coffee added to the cocoa and sugar mixture improves the flavor.

#### Tea for Serving 100

2 cups tea
6 gallons water

Tie tea in a bag large enough for leaves to triple in bulk. Tie bag and drop into pot of boiling water. Cover and brew 5 to 7 minutes. Remove bag and serve.

#### Soup for Serving 100

Allow 4 gallons for each 100 served. Dilute all concentrated soups with water or milk. If these are not available, use canned tomato juice.

Salt has been omitted purposely since it increases thirst and tension.

## Preparation of Sandwiches

Lay out all equipment needed such as: knives, short spatula, mixing spoon, bowls, trays, large pans, cutting boards and No. 30 or No. 40 scoop.

Arrange for a production line of three or four people. Assign to each a specific portion of the work to do, such as:

1. Lay out single slices of bread to cover the cutting board or area to be used.
2. Spread with creamed butter or margarine mixed with mayonnaise or evaporated milk.
3. Place scoop (No. 30 or 40) of filling in center of each slice.
4. With short spatula spread to edges with two motions.
5. Cover with 2 slices of bread to provide the top of the first and the bottom of the next sandwich. Repeat to a pile of not over 10 or 12 slices. Cut the pile in half.
6. Pack in a deep pan lined with wax paper. Cover first with wax paper, then with damp towel, and more paper or a plastic cover. Keep as cool as possible.

## SANDWICH FILLINGS FOR 100

### Egg Sandwich

75 eggs
1 qt. dressing
seasoning

### Chopped Meat

Meat - cooked and ground-10 lb. or 8 qt.
Dressing - boiled or mayonnaise - 1 qt.
Eggs, hard cooked-28 eggs
Salt - 4 oz. or 1/2 cup

### Baked Bean Sandwich

2 gal. or 8 qts baked beans
Season with mustard, salt, pepper and vinegar

### Salmon or Tuna

Salmon or tuna, 16 - 1 lb. cans
Lemon juice, fresh or canned - 1 cup
Boiled dressing - 1 qt.
Chopped pickles 2 qt.

### Peanut Butter

Peanut butter - 5 lbs.
Margarine or butter - 1¼ lb. or 2½ cups
Milk - 2/3 cup
Bread (200 slices) 11 1/8 loaves

### Ham Sandwich

5 lbs. (20 slices per lb.)

## SUGGESTIONS FOR EMERGENCY SERVING

Put out the food items to be served cafeteria style. Use tongs or napkin to hand out sandwiches from the storage pans. Do not permit handling by any person other than the server.

Place cups, preferably paper, on trays. Fill metal pitcher with coffee, tea or cocoa, and pour into cups according to demand.

Use the same method for soup.

Assure an equitable distribution by serving standard portions, using standard serving ladles, etc.

## B. RELATIVELY NORMAL FEEDING WITH EXPANDED NUMBERS

### 1. School Kitchens

These kitchens are equipped to serve simple noon meals to school children. The school personnel, with the aid of the volunteer assistance can adapt and expand the simple type A meal to feed groups assigned to them.

Recipes are already available in these kitchens including Recipes for Using Dry Milk and Dry Eggs. These will also be available from the School Lunch and Nutrition Division of the Department of Public Instruction.

### 2. Hospitals

Special cases will be assigned to the hospitals under the supervision of the Medical Committees. Suitable material and recipes will be made available by the dietitian to the volunteers assigned to this service.

### 3. Others

Church, Grange, or Lodge Hall kitchens, as well as others, should collect and have on file suitable menus and recipes for emergency feeding. Graduates from the Red Cross Canteen classes should welcome an opportunity to "intern" in the school kitchens regularly serving noon meals, or in the hospitals for special feeding.

## C. GENERAL

### 1. How to Use Dry Milk

1/4 cup dry milk plus 1 cup water = 1 cup liquid milk
1 cup " " " 1 qt. " = 1 qt. liquid milk
4 cups (1 lb.)" " 4 qts. " = 1 gal. liquid milk

Schools and hospitals may well have quantities of non-fat dry milk on inventory. This has a minimum residual butter fat content of 0.6% and may run as high as 1/25% in good spray types. It is an acceptable food if well prepared and served cold.

To reconstitute sprinkle dry milk on top of lukewarm water and beat well with a rotary or French whip by hand or by a power mixer. It may be prepared double strength. If possible to refrigerate, it is well to reconstitute the milk the day before, or as many hours before using as possible. When chilled this is as acceptable as other forms of liquid milk.

When used for baking it should be mixed with the other dry ingredients.

### 2. Proportions for Reconstituting Dry Eggs

Dried egg powder has practically the same food value as fresh eggs, and may be used to replace them as follows:

| Dried Whole Egg | Milk or Water | Fresh Egg |
|---|---|---|
| 2 Tablespoons | plus equal amount of water | Equivalent to 1 egg |
| 4 " | " | 2 eggs |
| 6 " | " | 3 eggs |
| 1/2 cup | " | 4 eggs |
| 10 Tablespoons | " | 5 eggs |
| 3/4 cup | " | 6 eggs |
| 1 cup | " | 8 eggs |
| 1 1/4 cup | " | 10 eggs |
| 1 1/2 cup | " | 12 (or 2 cups) |

Recipes using dry eggs are available in School kitchens or from the School Lunch and Nutrition Division, State Department of Public Instruction, upon request.

## SECTION VI

## SANITATION

A. Water

Adequate water is part of the feeding program. One gallon per person per day is a minimum requirement. This includes water used for all purposes, especially for drinking and for cooking purposes.

When necessary to transport water, a tank truck will be required.

All drinking water should be boiled unless advised that it is unnecessa Disinfectants may be used - for small quantities i.e. "Halozen" tablets or chlorine. Bottled or carbonated water can be used temporarily when normal water supply has been suspended. Heating removes the carbonizati so that it can be used for cooking.

B. Garbage

Garbage should be disposed of at least daily and washed garbage cans should be tightly covered. If regular garbage collection facilities are not available, burn or bury. In burning garbage, an incinerator and extra wood is needed to avoid objectionable odors. In burying garbage cover daily with at least 4 inch of soil, and eventually with at least 2 ft. of soil.

C. Milk

No raw milk should be used. If you use fresh milk be sure it is pasteurized. If it is not pasteurized, bring to the boiling point and hold at that temperature for 15 seconds to one minute. Evaporated and dried milk may be used safely.

D. Dishwashing

May be done with a dishwashing machine or by hand. Pay attention to following:

1. Convenient management of work, space and equipment.

2. An adequate supply of hot water.
   120° F to 140° for washing
   170° F to 180° F for rinsing

3. Necessary equipment and supplies.

   (a) Rubber scrapers or waste paper for scraping

   (b) Dish pans and wire racks, or sinks (3 for each dishwashing unit). Clothes boilers, galvanized wash tubs, new garbage cans 100# shortening cans or pails may substitue for dishpans or sinks. Perforated containers may substitute for racks to immerse in hot rinse water.

   (c) Clean dishclothes and towels if not possible to air dry.

(d) Dishwashing compound for machine washing and soap or detergent for washing dishes by hand.

(e) Metal sponge, steel wool, etc.

4. Effective Dishwashing Procedures

(a) Scrape dishes

(b) Pre-rinse, if possible

(c) Separate glasses, silver and china

(d) Dishwashing solution should be as hot as hands of the washer can tolerate. If baskets are available, wash water should be 140°F.

Wash glasses, silver and china in that order.

(e) Rinse by immersing dishes in clean, very hot water 170°F. to 180°F. A wire basket or perforated containers in which dishes are loaded make it possible to immerse them in hot water without burning the dishwasher. If hot water is not available, a sterlizing compound should be used in rinse water. Chlorox is readily available; two tablespoons per gallon of water or the following can be prepared: Add 12 oz. of chlorinated lime to 1½# washing soda in 1 gallon water. Allow solution to stand until sediment has settled. Pour clear liquid from the top. Use 2 tablespoons of this clear solution to each gallon of rinse or sterlizing water.

(f) Dry without toweling whenever possible.

(g) Store dishes in clean cupboards or cover with clean towels or paper.

E. Food Handling

Workers should wear clean wash clothes, low heels and hair nets.

Workers should wash their hands before handling food and after each visit to the toilet.

Toilet facilities must be adequate and provided with hot water, soap and paper towels.

Persons with colds, sore throats or wounds on the face, hands or forearms, should not handle foods or utensils.

1. Storage

All foods should be kept tightly covered to prevent contamination. Keep in a cool, dry, well ventilated storeroom.

Store dry milk, dried fruits, cereals, flour, crackers, sugar, etc. in metal cans with tightly fitted covers.

Leave coffee, tea, and cocoa in original container and store in covered cans.

Keep flies and insects under control, and exterminate rats and mice.

2. Methods for Icing Foods.

Foods, such as milk, left-over soups and stew may be stored in 20 quart or 40 quart milk cans. Be sure all left-over foods are quickly cooled to room temperature. Then cover can and place in larger container, such as a metal can, box or barrel. Pack space between the two cans solidly with cracked ice.

Fish needs special care. Set a colander in a wooden fish tub or basket. Place seafood in bottom of the colander and cover with a heavy layer of shaved or cracked ice. A heavy canvas or burlap cover should be put over the top to cut down on melting of the ice left for any length of time.

3. Methods for Keeping Foods Hot

Foods will not only keep hot but continue to cook slowly in improvised Swedish "Hay Boxes".

Partially fill a box or basket with hay, excelsior, or crumpled paper. Place food container with tightly fitted cover filled with food to be kept hot in center, surrounding with packing already described.

# SECTION VII

## REFERENCES FOR EMERGENCY OR LARGE QUANTITY FEEDING

AMERICAN RED CROSS KIT OF PUBLICATIONS
Eastern Area Office, Alexandria, Virginia
- Mass Care in Disaster, 1951
- The Organization and Operation of Shelters
- Suggestions for Feeding in Disaster
- Demonstration Material for Teaching Quantity Cookery
- Menus, Market Orders and Recipes for 100 People for 1 week.
- Suggested Methods for Icing Foods and Keeping Foods Hot
- Outdoor Cookery
- Sanitation

FEDERAL CIVIL DEFENSE ADMINISTRATION BOOKLETS, available from Superintendent of Documents, Government Printing Office, Washington 25, D. C.

(a) Survival Under Atomic Attack, price 10 cents

(b) Health Services and Special Weapons Defense. price 60 cents. (A compliation of the information pertaining to food was published under title "Food Problems in Civil Defense" in the Journal of The American Dietetic Association. February 1951.)

(c) Civil Defense Against Atomic Warfare (a selected reading list), price 10 cents.

(d) Medical Aspects of Atomic Weapons, price 10 cents

(e) What You Should Know About Biological Warfare. price 10 cents.

WARTIME DISASTER PLANNING - HOSPITAL DIETARY DEPARTMENT, Division of Hospitals Circular Memorandum 51-20 and 51-18, Federal Security Agency, Public Health Service, Washington 25, D. C.

*Food Purchasing Guide for Group Feeding, price 25 cents

*Planning Food for Institutions, 1951, price 45 cents

*Cook's Workbook, 1951, price 50 cents

*Navy Cook Book, 1944, price $3.00

*Available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

# REFERENCES

*Large Quantity Recipes Using Non-Fat Dry Milk

*Large Quantity Recipes Using Dry Eggs

*Large Quantity Recipes Using Potatoes

*Available free from School Lunch and Nutrition Division, Department of Public Instruction, Harrisburg.

THE HOMELESS, TOO, SHALL EAT, a manual for emergency feeding, to be reissued in mimeographed form by the Battle Creek Michigan Home Economics Association. (Further information from Miss Mary Barber.) Copies may be obtained from Mrs. Helen Branton, Apartment #7, Kulp Court, Battle Creek, Michigan $1.50 each lots of 10-$1.00 each.

SOME COMMERCIAL MATERIALS AVAILABLE FREE UPON REQUEST

Canned Food Recipes Serving Fifty

Guide for Use of Canned Foods in Emergency Feeding,
National Canners' Association, 1133-20th Street, N.W.
Washington 6, D. C.

Quantity Recipes for Quality Foods
Evaporated Milk Association, 307 N. Michigan Ave. Chicago 1, Ill.

Cooking Meat in Quantity
National Live Stock and Meat Board, 407 S. Dearborn Street,
Chicago 5, Illinois

Single Service News, February, March, 1951.
Paper Cup and Container Institute, 551 Fifth Avenue,
New York 17, N. Y.

Let's Cook Outdoors
Pennsylvania State College School of Agriculture, Extension Bulletin 285 - January, 1946, State College, Pennsylvania

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